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Open anatomic nephrolithotomy – Application in a constrained health system

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Introduction: Less invasive procedures are well described and generally accepted as the standard of care for the management of renal calculi, even though patients with significant stone burdens often require multiple sessions and sometimes interventions before being rendered stone free. With the ever increasing demands, in the form of long waiting lists and limited operating time, placed on the South African state healthcare sector, the few specialized stone centres that exist, might have to consider Anatomic nephrolithotomy, often viewed as an outdated method as part of their armamentarium in order to cost-effectively and efficiently deal with this challenge.

Methods: A retrospective study of a series of 5 patients that underwent Anatomic nephrolithotomy, using standard protocol, during a 9-month period at a tertiary centre was reviewed. Perioperative events including indications, and outcomes with regard to morbidity, including duration of stay, complications and physiological parameters such as blood loss and renal function were described.

Results: All 5 patients had significant stone burdens on multi-axial Computed Tomographic imaging, not amenable to a single sitting of any other modality. The procedures lasted on average 2-hours. Excluding preoperative investigations patients were admitted for an average of 7 days during the convalescence period. 4 of the 5 patients that were post-operatively imaged were found to be stone free, with one having residual calculi not accounted for intraoperatively, addressed with a single sitting of laser lithotripsy. There was no significant deterioration in physiological parameters, with only 1 patient requiring a post-operative blood transfusion. Only one patient developed superficial wound sepsis that resolved without having to return to theatre.

Conclusion: Current guidelines recommend percutaneous nephrolithotomy (PCNL) followed by extracorporeal shockwave lithotripsy (ESWL) or repeat PCNL. However in our setting considering that most patients are from impoverished backgrounds with limited access to healthcare, and others demanding addressing of stones at a single sitting, open Anatomic nephrolithotomy seems to be a viable cost-effective option in a constrained setting.